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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.		
09/966,866	09/28/2001	Bram Peeters	0585-1031	4958		
75	<b>7590 08</b> /25/2004			EXAMINER		
William M. Le	ee, Jr.		WANG, QUA	AN ZHEN		
Lee, Mann, Smi Suite 410	Lee, Mann, Smith, McWilliams, Sweeney & Ohlson Suite 410			PAPER NUMBER		
209 South LsSa	lle Street		2633			
Chicago, IL 6	0604-1202		DATE MAILED: 08/25/2004	. 4		

Please find below and/or attached an Office communication concerning this application or proceeding.

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Technology Center 2600

Application No.	Applicant(s)			
09/966,866	PEETERS ET AL.			
Examiner	Art Unit			
Wang Quan-Zhen	2633			
ears on the cover sheet with the	correspondence address			
36(a). In no event, however, may a reply be ting within the statutory minimum of thirty (30) day will apply and will expire SIX (6) MONTHS from a cause the application to become ABANDONI	mely filed  ys will be considered timely.  n the mailing date of this communication.  ED (35 U.S.C. § 133).			
eptember 2001.				
action is non-final.				
3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under <i>Ex parte Quayle</i> , 1935 C.D. 11, 453 O.G. 213.				
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4) Claim(s) 1-24 is/are pending in the application. 4a) Of the above claim(s) is/are withdrawn from consideration.  RECEIVED				
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are: a)⊡ accepted or b)⊠ object drawing(s) be held in abeyance. Se	ee 37 CFR 1.85(a).			
caminer. Note the attached Office	e Action or form PTO-152.			
s have been received. s have been received in Applicat rity documents have been receiv u (PCT Rule 17.2(a)).	ion No ed in this National Stage			
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#### **DETAILED ACTION**

#### **Drawings**

1. The drawings are objected to because the blocks in fig. 1 do not correspond to conventional symbols used in the art, therefore, descriptive labels or legends for those blocks in fig. 1 are needed. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

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#### Specification

2. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

The abstract of the disclosure is objected to because "means" should be avoided in the abstract. Correction is required. See MPEP § 608.01(b).

#### Claim Objections

3. Claims 12 and 23 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.

Regarding claim 12, it recites: "An optical link according to claim1 wherein the series of spans are not normalizes ...". However, claim1 sets the limitation that "an optical link ... comprising a series of normalized spans ...and the total noise in the link is the sum of the contributions from each span ...". The

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limitation set in claim 12 fails to further limit the subject matter of the previous claim 1 that it depends on.

Regarding claim 23, it recites: "A method according to claim 22 wherein the series of spans are not normalizes ...". However, claim 22 sets the limitation that "A method of ... in a link ... having a series of normalized spans ... and the total noise in the link is the sum of the contributions from each span ...". The limitation set in claim 23 fails to further limit the subject matter of the previous claim 22 that it depends on.

#### Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 12 an 23 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 12 and 23 provides for the use of "the series of spans are not normalizes", but, since the claim does not set forth any steps involved in the method/process, it is unclear what method/process applicant is intending to encompass. A claim is indefinite where it merely recites a use without any active, positive steps delimiting how this use is actually practiced.

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#### Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35
U.S.C. 102 that form the basis for the rejections under this section made in this
Office action:

A person shall be entitled to a patent unless -

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-5, 7-11, 13-15, 17-22, and 24 are rejected under 35
U.S.C. 102(e) as being anticipated by Essiambre et al. (U.S. Patent 6,606,176
B1).

Regarding claims 1, 4, 13, 17, 22, and 24 Essiambre et al. teach an optical link from one terminal (fig. 1, TX and POST-AMPLIFIER) to another (fig. 1, RX and PRE-AMPLIFIER), comprising a series of normalized spans (the power map in fig. 2 indicates the spans have unity gain) interconnecting nodes between the terminals, dispersion compensation means (fig. 1 DISP-COMP FIBER) applying dispersion compensation to each span. Each span intrinsically contributes noise to the link system. The amount of dispersion applied to each mid-span by the dispersion compensation means is determined by the span length (dispersion map in fig. 2, column 5, lines 38-39, lines 43-45), inherently determined in accordance with the noise contribution of that span since it is an intrinsic property that "the noise in any span is related to the losses in that span" (page 2, line 16 of the present application).

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Regarding claims 2 and 3, there is a defined allowable noise level for any system. When a system is disclosed, it implies that the accumulative noise from all of the spans in that system should be smaller than the maximum allowable noise for the system in order for the system to function properly.

Regarding claim 5, the optimum rule of operation of a system depends on many system parameters, Essiambre et al. disclose the optimum performance conditions for various systems in figs. 4-9.

Regarding claims 7-8, 14-15, and 21, Essiambre et al. disclose the dispersion compensation using a series DCF (fig. 1, DISP-COMP FIBER) modules located at a series of amplifiers (nodes) (fig. 1, IN-LINE AMPLIFIER) to provide dispersion compensation. The compensation can be viewed as to precompensate next span or post-compensate the previous span.

Regarding claims 9-11, Essiambre et al. disclose a series of amplifiers (fig. 1, IN-LINE AMPLIFIER) normalized for each span (fig. 2). The amplifier at a node can be viewed as to pre-amplify the signal for next span or post-amplify the previous span.

Regarding claims 18-21, Essiambre et al. teach an optical communication network comprising a link from one terminal (fig. 1, TX) to another (fig. 1, RX), comprising a series of normalized spans (the power map in fig. 2 indicates the spans have unity gain) interconnecting nodes between the terminals, dispersion compensation means (fig. 1, DISP-COMP FIBER) applying dispersion compensation to each span.

#### Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Essiambre et al..

Regarding claim 6, Essiambre et al. teach to compensate dispersion in each span locally (dispersion map in Fig. 2). Essiambre et al. does not specifically teach the formula to calculate the length of the dispersion compensation fibers as claimed. However, examiner takes office note that it is well known in the art that the cumulative dispersion is the integrated dispersion (dispersion\*distance). That implies that span dispersion is equal to (dispersion\*span-distance). The dispersion compensation for each span is thus inherently defined as

optimum-dispersion\*(span-distance)/distance.

That is equivalent to the relationship given by the applicants in claim 6.

Therefore, it would have been obvious for one ordinary skill in the art at the time when the invention was made to derive the claimed formula to calculate the length of dispersion fibers for each span in order to accurately compensate the dispersion induce in that span.

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Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Essiambre et al. in view of Park et al. (U.S. Patent Application Publication US 2003/0058497 A1).

Regarding claim 16, Essiambre et al. teach a dispersion compensation mean applying to optical fiber span to provide dispersion compensation. Essiambre et al. further teach to use optical dispersion compensating fiber module for the dispersion compensation mean. Essiambre et al. do not specifically teach to use at least one of fiber grating, virtually imaged phase array MEMS etalon, and cascaded Mach Zehnder for the dispersion mean, as claimed by the applicants. However, Park et al. (U.S. Patent Application Publication US 2003/0058497 A1) teach to use virtually imaged phase array (VIPA) or a fiber Bragg grating for dispersion compensation (Page 4, 0044). It would have been obvious for one ordinary skill in the art at the time when the invention was made to replace the optical fiber dispersion compensation module in the system taught by Essiambre et al. by virtually imaged phase array (VIPA) or a fiber Bragg grating for dispersion compensation taught by Park et al. to build more flexible and cost-effective systems without changing the fundamental novel features of the invention by Essiambre et al..

#### Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

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Essiambre (U.S. Patent 6,583,907 B1) discloses an optical communication system utilizing dispersion compensation.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Quan-Zhen Wang whose telephone number is (703) 305-8392. The examiner can normally be reached on 8:30 AM - 5:00 PM, Monday - Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chan Jason can be reached on (703) 305-4729. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

qzw

PATENT EXAMINER

COLUDORY CENTER 2600

# Notice of References Cited Application/Control No. 09/966,866 PETERS ET AL. Examiner Wang Quan-Zhen Applicant(s)/Patent Under Reexamination PETERS ET AL. Page 1 of 1

#### **U.S. PATENT DOCUMENTS**

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
	Α	US-6,606,176 B1	08-2003	Essiambre et al.	398/158
	В	US-2003/0058497 A1	03-2003	Park et al.	359/127
	С	US-6,583,907 B1	06-2003	Essiambre, Rene'-Jean	398/158
	D	US-			
	Е	US-			
	F	US-			
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	к	US-			
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	М	US-			

#### FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
	N					
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#### **NON-PATENT DOCUMENTS**

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
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\*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).) Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

## USPTO TO PROVIDE ELECTRONIC ACCESS TO CITED U.S. PATENT REFERENCES WITH OFFICE ACTIONS AND CEASE SUPPLYING PAPER COPIES

In support of its 21st Century Strategic Plan goal of increased patent e-Government, beginning in June 2004, the United States Patent and Trademark Office (Office or USPTO) will begin the phasein of its E-Patent Reference program and hence will: (1) provide downloading capability of the U.S. patents and U.S. patent application publications cited in Office actions via the E-Patent Reference feature of the Office's Patent Application Information Retrieval (PAIR) system; and (2) cease mailing paper copies of U.S. patents and U.S. patent application publications with Office actions (in applications and during reexamination proceedings) except for citations made during the international stage of an international application under the Patent Cooperation Treaty (PCT). In order to use the new E-Patent Reference feature applicants must: (1) obtain a digital certificate and software from the Office; (2) obtain a customer number from the Office; and (3) properly associate patent applications with the customer number. Alternatively, copies of all U.S. patents and patent application publications can be accessed without a digital certificate from the USPTO web site, from the USPTO Office of Public Records, and from commercial sources. The Office will continue the practice of supplying paper copies of foreign patent documents and nonpatent literature with Office actions. Paper copies of cited references will continue to be provided by the USPTO for international applications during the international stage.

#### **Schedule**

June 2004 July 2004 TCs 1600, 1700, 2800 and 2900

July 2004 August 2004 TCs 3600 and 3700 TCs 2100 and 2600

All U.S. patents and U.S. patent application publications are available on the USPTO web site. However, a simple system for downloading the <u>cited</u> U.S. patents and patent application publications has been established for applicants, called the E-Patent Reference system. As E-Patent Reference and Private PAIR require participating applicants to have a customer number, retrieval software and a digital certificate, all applicants are strongly encouraged to contact the Patent Electronic Business Center to acquire these items. To be ready to use this system by June 1, 2004, contact the Patent EBC as soon as possible by phone at 866-217-9197 (toll-free), 703-305-3028 or 703-308-6845 or electronically via the Internet at <u>ebc@uspto.gov</u>.

#### **Other Options**

The E-Patent Reference function requires the applicant to use the secure Private PAIR system, which establishes confidential communications with the applicant. Applicants using this facility must receive a digital certificate, as described above. Other options for obtaining patents which do not require the digital certificate include the USPTO's free Patents on the Web program (http://www.uspto.gov/patft/index.html). The USPTO's Office of Public Records also supplies copies of patents for a fee (http://ebiz1.uspto.gov/oems25p/index.html). Commercial sources also provide U.S. patents and patent application publications.

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#### Summary

The United States Patent and Trademark Office (Office or USPTO) plans in the near future to: (1) cease mailing copies of U.S. patents and U.S. patent application publications (US patent references) with Office actions except for citations made during the international stage of an international application under the Patent Cooperation Treaty and those made during reexamination proceedings; and (2) provide electronic access to, with convenient downloading capability of, the US patent references cited in an Office action via the Office's private Patent Application Information Retrieval (PAIR) system which has a new feature called "E-Patent Reference." Before ceasing to provide copies of U.S. patent references with Office actions, the Office shall test the feasibility of the E-Patent Reference feature by conducting a two-month pilot project starting with Office actions mailed after December 1, 2003. The Office shall evaluate the pilot project and publish the results in a notice which will be posted on the Office's web site (www.USPTO.gov) and in the Patent Official Gazette (O.G.). In order to use the new E-Patent Reference feature during the pilot period, or when the Office ceases to send copies of U.S. patent references with Office actions, the applicant must: (1) obtain a digital certificate from the Office; (2) obtain a customer number from the Office, and (3) properly associate applications with the customer number. The pilot project does not involve or affect the current Office practice of supplying paper copies of foreign patent documents and non-patent literature with Office actions. Paper copies of references will continue to be provided by the USPTO for searches and written opinions prepared by the USPTO for international applications during the international stage and for reexamination proceedings.

### Description of Pilot Project to Provide Electronic Access to Cited U.S. Patent References

On December 1, 2003, the Office will make available a new feature, E-Patent Reference, in the Office's private PAIR system, to allow more convenient downloading of U.S. patents and U.S. patent application publications. The new feature will allow an authorized user of private PAIR to download some or all of the U.S. patents and U.S. patent application publications cited by an examiner on form PTO-892 in Office actions, as well as U.S. patents and U.S. patent application publications submitted by applicants on form PTO/SB08 (1449) as part of an IDS. The retrieval of some or all of the documents may be performed in one downloading step with the documents encoded as Adobe Portable Document format (.pdf) files, which is an improvement over the current page-by-page retrieval capability from other USPTO systems.

### Steps to Use the New E-Patent Reference Feature During the Pilot Project and Thereafter

Access to private PAIR is required to utilize E-Patent Reference. If you don't already have access to private PAIR, the Office urges practitioners, and applicants not represented by a practitioner, to take advantage of the transition period to obtain a no-cost USPTO Public Key Infrastructure (PKI) digital certificate, obtain a USPTO customer number, associate all of their pending and new application filings with their customer number, install no-cost software (supplied by the Office) required to access private PAIR and E-Patent Reference feature, and make appropriate arrangements for Internet access. The full instructions for obtaining a PKI digital certificate are available at the Office's Electronic Business Center (EBC) web page at: <a href="http://www.uspto.gov/ebc/downloads.html">http://www.uspto.gov/ebc/downloads.html</a>. Note that a notarized signature will be required to obtain a digital certificate.

To get a Customer Number, download and complete the Customer Number Request form, PTO-SB125, at: <a href="http://www.uspto.gov/web/forms/sb0125.pdf">http://www.uspto.gov/web/forms/sb0125.pdf</a>. The completed form can then be transmitted by facsimile to the Electronic Business Center at (703) 308-2840, or mailed to the address on the form. If you are a registered attorney or patent agent, then your registration number must be associated with your customer number. This is accomplished by adding your registration number to the Customer Number Request form. A description of associating a customer number with an application is described at the EBC web page at: <a href="http://www.uspto.gov/ebc/registration">http://www.uspto.gov/ebc/registration</a> pair.html.

The E-Patent Reference feature will be accessed using a new button on the private PAIR screen. Ordinarily all of the cited U.S. patent and U.S. patent application publication references will be available over the Internet using the Office's new E-Patent Reference feature. The size of the references to be downloaded will be displayed by E-Patent Reference so the download time can be estimated. Applicants and registered practitioners can select to download all of the references or any combination of cited references. Selected references will be downloaded as complete documents as Adobe Portable Document Format (.pdf) files. For a limited period of time, the USPTO will include a copy of this notice with Office actions to encourage applicants to use this new feature and, if needed, to take the steps outlined above in order to be able to utilize this new feature during the pilot and thereafter.

During the two-month pilot, the Office will evaluate the stability and capacity of the E-Patent Reference feature to reliably provide electronic access to cited U.S. patent and U.S. patent application publication references. While copies of U.S. patent and U.S. patent application publication references cited by examiners will continue to be mailed with Office actions during the pilot project, applicants are encouraged to use the private PAIR and the E-Patent Reference feature to electronically access and download cited U.S. patent and U.S. patent application publication references so the Office will be able to objectively evaluate its performance. The public is encouraged to submit comments to the Office on the usability and performance of the E-Patent Reference feature during the pilot. Further, during the pilot period registered practitioners, and applicants not represented by a practitioner, are encouraged to experiment with the feature, develop a proficiency in using the feature, and establish new internal processes for using the new access to the cited U.S. patents and U.S. patent application publications to prepare for the anticipated cessation of the current Office practice of supplying copies of such cited

references. The Office plans to continue to provide access to the E-Patent Reference feature during its evaluation of the pilot.

#### Comments

Comments concerning the E-Patent Reference feature should be in writing and directed to the Electronic Business Center (EBC) at the USPTO by electronic mail at <a href="mailto:eReference@uspto.gov">eReference@uspto.gov</a> or by facsimile to (703) 308-2840. Comments will be posted and made available for public inspection. To ensure that comments are considered in the evaluation of the pilot project, comments should be submitted in writing by January 15, 2004.

Comments with respect to specific applications should be sent to the Technology Centers' customer service centers. Comments concerning digital certificates, customer numbers, and associating customer numbers with applications should be sent to the Electronic Business Center (EBC) at the USPTO by facsimile at (703) 308-2840 or by e-mail at EBC@uspto.gov.

#### Implementation after Pilot

After the pilot, its evaluation, and publication of a subsequent notice as indicated above, the Office expects to implement its plan to cease mailing paper copies of U.S. patent references cited during examination of non provisional applications on or after February 2, 2004; although copies of cited foreign patent documents, as well as non-patent literature, will still be mailed to the applicant until such time as substantially all applications have been scanned into IFW.

#### For Further Information Contact

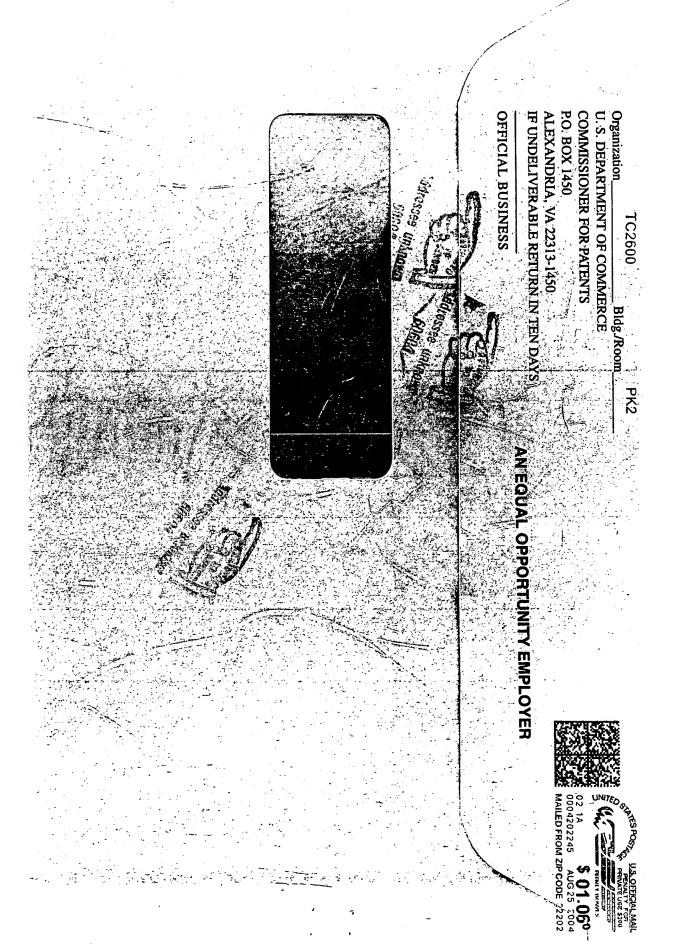
Technical information on the operation of the IFW system can be found on the USPTO website at http://www.uspto.gov/web/patents/ifw/index.html. Comments concerning the E-Patent Reference feature and questions concerning the operation of the PAIR system should be directed to the EBC at the USPTO at (866) 217-9197. The EBC may also be contacted by facsimile at (703) 308-2840 or by e-mail at EBC@uspto.gov.

Date. 12 1/03

Michales P. Rodici Nicholas P. Godici

Commissioner for Patents

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Washington Doc 29231